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plates were secured later and the result of the measures of 16 exposures of good quality give as the relative parallax

$$\pi = +0''.019 \quad \pm 0''.006$$
$$\mu_\alpha = +0''.025 \quad \pm 0''.012$$

The absolute parallax is +0″.021. Accepting the apparent magnitude at maximum as −1.5 and at minimum +10.5 (*Harvard Circular*, No. 208), we find for the absolute magnitude −4.9 and +7.1 respectively

A. van Maanen.

A Seventeenth Nova in the Andromeda Nebula

This object is situated 15″ east, 150″ north of the nucleus, and is surrounded by soft nebulosity. It appears on plates taken by Shapley in October, and is invisible on earlier and later plates by Sanford and Shapley.

Estimated Magnitudes

September 21, 1919	invisible
October 15, 1919	invisible
October 16, 1919	invisible
October 30, 1919	15.7
October 31, 1919	16.5
November 30, 1919	invisible
December 18, 1919	invisible

No. 17 is nearer the center than any nova found in the *Andromeda* nebula since the discovery of No. 1 in 1885, and in recorded maximum brightness exceeds all but No. 1. The change of magnitude is uncommonly rapid for the descending branch.

Milton Humason.

Nebular Lines in the Extreme Red

In a preliminary attempt to explore the near infra-red spectra of the gaseous nebulae, the spectrum of the planetary nebula N.G.C. 7027 has been photographed with plates bathed in dicyanin. Four lines, which appear not to have been previously reported, have been found in the extreme red. Their wave-lengths are approximately 7009, 7065, 7138, and 7325 A. Of these the second is doubtless due to helium, while the origin of the others is unknown.

The instrumental equipment used in this preliminary work was the 36-inch refractor with a spectrograph carrying a single 60° prism and a camera of 6 inches focal length, ratio F/4. By reason of these optical dimensions the scale of the spectrograms is small, a millimeter being the equivalent of about 600 A. Under normal conditions of adjustment for the visible region of the spectrum the definition given by this instrument is excellent as far as 6800 A, where, however, it begins to fall off; it was therefore necessary in these observations to adopt a mean focus for the region sought to be photographed, which lies beyond that limit, and a focal setting was found which gives fair, tho not perfect, definition from 6700 to 8500 A.

The observations were made on November 20, 1919, with an effective exposure of about an hour, and on the following night with an exposure of six hours and twenty minutes. The first of these exposures was interrupted by clouds and was only partially successful. The measures are of the second plate. The wave-lengths resulting from the measures are given in the first column of the accompanying table. The second column records intensities roughly assigned on a system which would rate the strength of Hα at 100. Two of the faint lines (668 and 673 $\mu\mu$) had previously been measured with apparatus of greater dispersion, and a third (706 $\mu\mu$) may be assumed to be due to helium. These three lines indicate a systematic error of about -4 A, which is a surprisingly large discrepancy even with such low dispersion. The lines in question are very faint indeed, about at the limit of measurability, while the comparison lines are, on the other hand, relatively strong. That fact, taken in connection with the imperfection of focus already alluded to, would operate to produce a discrepancy of the nature of the one observed. This offers the most plausible explanation of the discordance that occurs to me, and assuming it to be the correct one, and, furthermore, that the error is less for the stronger nebular lines, I have applied to the latter a correction of $+ 2.5$ A, which gives the values in the last column of the table. These are offered as provisional wave-lengths.

TABLE OF WAVE-LENGTHS

Measured	I	Assumed Normal	Provisionally Adopted
6673.3	1	6678.2	....
6726. ±	1	6730.	....
7006.4 ±	1	....	7009 ±
7062.0	2	7065.2	7065
7135.9	10	....	7138
7322.6	9	....	7325

The line 7009 A is very faint, and while there is nothing in the appearance to suggest that it is spurious, as a weak line, photographed on only one plate, its reality is necessarily open to question.

I am indebted to the generosity of Dr. Keivin Burns for the plates on which the photographs were made Dr. Burns is at present contributing his services as a special investigator at the Lick Observatory, for the purpose of photographing various celestial spectra in the near infra-red. To his especial skill in preparing plates of extreme sensitivity to the longer wave-lengths the success of these preliminary observations is largely due.

December, 1919. W. H. Wright.

Preliminary Note on the Variation of Latitude

The variation of latitude for this station can be derived from the observed motion of the pole of figure about the pole of rotation of the Earth. The coördinates of the observed rotation have been reduced, up to the epoch 1918, and have been published in various issues of the *Astronomische Nachrichten.* The discussion made here recently of this published material gives the following expression for the variation at this station, from 1890 to 1914:

$$\begin{aligned}\phi-\phi_0=+0''.02+0''.15\cos(t-1902.05)303^\circ \\ +0''.06\cos(t-1902.3)\,360^\circ,\end{aligned}$$

where t is expressed in years; and the computation has been made for every tenth of a year. The coefficient 303° corresponds to a period of 1.19 years, derived from the observed values up to 1918, with a probable error of less than ± 0.01 year. The published material includes the data from over twenty fixed observatories, and from eight international latitude stations where zenith telescope observations have been made. The average difference between the values of $\phi - \phi_0$ derived from the observed coördinates of the rotation and from the expression above is $\pm\ 0''.04$. The average value of $\phi - \phi_0$ is $\pm\ 0''.12$, which is three times the average deviation of the computed values.

The extensive investigation of the variation of latitude by Dr. S. C. Chandler resulted in an expression of the variation for a station in longitude λ of the form:[1]

$$\begin{aligned}\phi-\phi_0=-0''.16\cos[\lambda+(t-2411790)0^\circ.85] \\ -r^2\cos(\odot-G),\end{aligned}$$

where t was given in days. The expression consists of two terms, one having a period of 427 days (fourteen months), and the other an annual period. These terms closely resemble those derived here

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[1] *Astr. Jour.*, **14**, 141, 1894.